GrummanWorld

Unstoppable! Postal Vehicle Conquers Torture Track

It's two down and one lap to go for the Grumman/General Motors team in the U.S. Postal Service's high-stakes Long Life Vehicle competition. The Grumman truck has become the first and only one to successfully complete the most grueling and tell-tale part of the vehicle competition – the 24,000 mile durability test – on schedule.

Grumman is in the thick of a three-way competition to win the $1 billion contract to build 99,150 postal vehicles – the fleet that will carry the nation's mail into the 21st Century. Grumman is the prime contractor and GM is a major subcontractor supplying the chassis. GM's proven S-10 chassis was chosen because it had been operated for more than 1.6 million miles in track and proving ground tests.

The road test phase of the competition took place in Laredo, Texas, located in the southern part of the state, near the Mexican border. Laredo experienced its worst weather in a century – snow, rain and ice.

After some weather-related delays, the no-holds-barred endurance test, which ran from 6 a.m. to 2 a.m. daily, began on January 20. The Grumman vehicle wrapped up its last mile at 3 p.m. on April 28.

"With the abnormal weather conditions, we experienced just about any road and climatic condition that the vehicles might encounter anywhere in the country. In addition, the Postal Service itself claimed that this test was like nothing else ever before," said Saul Ferdman, Grumman Allied vice president.

The test track featured potholes, cobblestones, Belgian blocks, and native wildlife – rattlesnakes and wild pigs – that mistakenly thought it safe to travel the test roads at night. It became a definite test of survival of the fittest. The vehicles were expected to run over 960 miles of Belgian block, 960 miles of cobblestones and 960 miles of potholes.

In the end, all systems operated very well. The Grumman vehicle was on the course 99.5 percent of the time.

"The track testing was well planned and executed by the Postal Service," said Eddie Mackay, vice president of Grumman Olson. "The Postal Service put some of its top people on the job and hired the consulting firm of Booz-Allen-Hamilton to gather test results on a daily basis and provide engineering support.

"Considering the harshness of the test course, no one could deny the need for occasional routine maintenance," added Mackay. "We were permitted to check the vehicle during the hours it was not being tested."

That ended up being from two to six o'clock in the morning. Grumman was allowed scheduled maintenance adjustments for such routine services as oil changes and filters and tire replacement at 3,000 mile intervals, with 24 hours notice. Five people from Grumman Olson's truck building facility in Sturgis, Michigan, and two General Motors engineers monitored the vehicle on a full-time basis, during the testing.

The Postal Service is seeking a vehicle that will last 24 years. Its current vehicles have an average lifespan of eight years. And, in breaking with standard vehicle testing procedure, the Postal Service required only the real thing – no prototypes – built to rigorous specifications, and having a proven production configuration.

On the test track, each wheel on each van was expected to hit a pothole 35,000 times. Each vehicle made 100 consecutive stops from a speed of 15 m.p.h. to check for overheating or alignment problems, in addition to stops and starts on the test track.

The vehicle ran 24,632 miles. That included some impressive feats:

(Continued on page 11)

At the government's test track in Laredo, Texas, the Grumman/GM Long Life Vehicle road over potholes like the one pictured above – 35,000 times.

A finalist in NASA's teachernaut competition, Susan Agruso recently visited Grumman's Space Station Mock-up Center.

Teachernaut Grades Mockup A+

"Who would ever refuse a ride in space?" said Susan Agruso, during her May 8 visit to Grumman's Space Station Mock-up Center in Bethpage.

A few days earlier, Agruso was selected from among 785 New York State teachers as a finalist for NASA's first-teacher-in-space competition. "It really is the thrill of a lifetime," said the physics teacher from East Islip High School (L.I.). "I always wanted be be an astronaut. I looked into it once and found out I didn't qualify. I didn't have 20-20 eyesight."

While donning an astronaut jumpsuit in the huge Space Station mock-up, Agruso commented that she is well aware of Grumman's role in the space program.

"As a science teacher on Long Island, it's hard not to follow Grumman. So many of our students have received scholarships, and so many Grumman parents have actively supported our science program."

The field of 120 teachernaut finalists will be narrowed down to 10 this summer. The final candidate will be selected in September for a January 1986 Shuttle mission.

As for the Space Station mock-up, Agruso says she was "overwhelmed by its sheer size. I never imagined the Space Station to be so big." ■

جرومان ترحب بالمتدربين المصريين

Grumman Welcomes Egyptian Trainees

On May 27, the first group of Egyptian Air Force personnel will begin learning how to operate and maintain the E-2C Hawkeye at Grumman's Bethpage facilities on Long Island.

All of the 16 in the first group are software management and programming specialists. In all, 200 Egyptians will be trained in various aspects of the Hawkeye.

"This will be the largest group of foreign students on the E-2C program to date," says Dick Strollo, manager of training for the E-2C Program. "For comparison's sake, about 130 Japanese personnel were trained on the E-2C."

Grumman is furnishing five E-2Cs to Egypt under a $400 million foreign military sale (FMS) contract. The training effort constitutes only a small part of the total contract.

The 16 students are now finishing up a nine-week course in English at the U.S. Air Force English Language Center in San Antonio, Texas. The course is called Specialized English Terminology – a crash course in computer, radar, and other technical terms. This is imperative, since these specialists will be charged with maintaining the E-2C software after the aircraft are delivered.

"When they come to Bethpage, we'll give them an overview of the Hawkeye's systems," says Strollo, "as well as the software elements – tracking, display, and tactical. Each individual will have a specific area of responsibility."

Later on, other military personnel will arrive for training, among them pilots, other flight crew members, such as weapon systems officers; publications specialists; safety officers; and maintenance personnel.

At the peak of the training effort, about 150 Egyptians will be at Bethpage.

In-country support will be necessary after the Egyptians return to their home country. At that time, several dozen Grummanites will be assigned there for several years.

The Egyptians will receive additional training at about 15 sites besides Bethpage – those of the Navy and Grumman subcontractors. "But the bulk of their training will take place in the Plant 39 classrooms in Bethpage," notes Strollo.

In each classroom, there will be one instructor for every six students. "In other areas, such as on the aircraft itself, many other Grummanites will be involved in the training," says Strollo. "About 100 Grummanites will be involved once the program reaches its peak."

Strollo adds that the Grummanites are looking forward to the students' arrival. "Any time you deal with foreign students, it's a very interesting experience," he says. "They have a different perspective on the world. We had a very warm, positive relationship with the Japanese students, and we expect the same to hold true with the Egyptians." ■

New Yacht Offers Luxury For Less

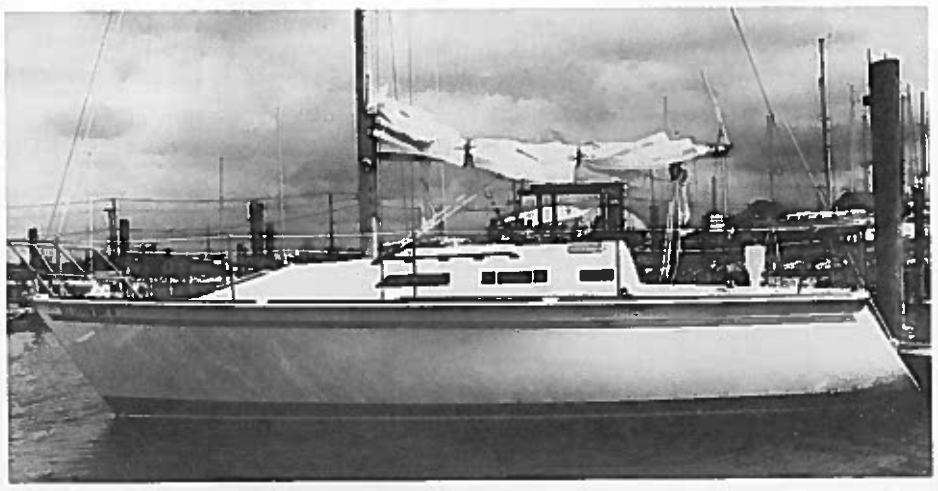
Pearson Yachts recently launched its newest cruiser/racer luxury model, the Pearson 28 (P-28). There are currently 60 units on order.

All Pearson's smaller sailboats, the Pearson 18, 23 and 25, have outboard motors, and retail from $6,000 to $16,000. Smaller boats attract customers who eventually trade up to larger models.

The P-28 bridges the gap between the smaller sailboats and the higher-priced luxury yachts. It is intended for first-time yacht buyers, as well as experienced sailors.

The P-28 retails for under $40,000, and includes all the amenities of a much larger vessel. It sleeps six and includes the forward V-berth, two settee berths in the main cabin and an extra large double berth located under the cockpit. The head compartment is aft providing equal access from both cabins. The boat also includes a three-cubic-foot icebox and full-size chart table. Wheel steering, diesel, sails, shower and deck hardware are all standard.

Pearson has devoted one manufacturing line at its Portsmouth (R.I.) facility to the P-28, with a one-boat-a-day production schedule. ■



The new Pearson 28 bridges the gap between the company's smaller sailboats and luxury yachts.

Grumman literally had the runners well covered at the recent Long Island Marathon. When 7,000 participants crossed the finish line, the company gave them high-tech "space blankets" bearing the Grumman logo. Five Grumman volunteers – Sharon Grosser, Debra Quinn, Mary Pellegrino, Yolanda Suppa and Linda Warren – were on hand at the finish line to drape the blankets over the runners' shoulders.

First Quarter Sales Up 29 Percent

For the first quarter of 1985, Grumman Corporation has reported net income of $27.2 million or 90 cents per share on sales of $758.5 million. The comparable totals for the first quarter of 1984 were net income of $25.3 or 85 cents per share on sales of $589.2 million.

At $691.3 million, aerospace sales showed a 30 percent gain over last year's first quarter. Operating profits, which were only 15 percent higher, reflected the substantial efforts on the F-14D and A-6F program being performed at no profit. Although there were fewer deliveries of current F-14 and A-6 aircraft in the 1985 period, total sales increased with the initial production of C-2As, deliveries of test equipment, aircraft modification work, and efforts on the A-6 and F-14 upgrade programs.

Non-aerospace sales and operating profits increased approximately 19 percent because of higher sales of aluminum truck bodies and data system services.

Consolidated interest costs were appreciably higher as a result of increased borrowing.

"The first quarter's results were what we expected," said Grumman Chairman Jack Bierwirth. "We stated in our annual report that our F-14 and A-6 upgrade programs would carry little or no profit, but that their production lines would be extended through the end of this century. That means greater strength for the U.S. Navy and Grumman."

Commenting on the future, Bierwirth mentioned the possible cost of success. "Grumman has never been faced with as many opportunities to grow as it is today, and we intend to take advantage of the best of them.

"That means we'll continue to invest in research and development as well as in bid and proposal efforts," he said. "And those investments will result in lower 1985 earnings per share figures than have been estimated by the many securities analysts who follow Grumman. However, I believe those investments will firmly establish our technological positions and secure our future." ■

New Engine For A-6F

The U.S. Navy has selected the General Electric F404-G.E.-00D engine for the Grumman A-6F, the next generation Intruder. The engine is almost identical to the one used in the F/A-18 Hornet, enabling it to meet the A-6F development schedule in a very short period of time and at a low cost.

First flight of the A-6F Intruder equipped with the new G.E. engines is slated for May 1987. ■

Retirees

On behalf of our fellow workers, Grumman World salutes the following Grummanites for their contributions to the company and wishes them well in their retirement. Those who have recently retired are:

Kenneth J. Audroue (15), Stanley P. Bartoszek (3), Raymond M. Bohanon (44), Dorothy A. Buckley (2), Florence H. Byrne (30), Joseph E. Meyer (14), James C. Riffle (17), Andrew J. Schmitt (5), Stanley G. Spero (3), Michael A. Troise (2), Norman W. Diggs (2), Robert V. Haase (77), Frances E. Geyer (6), George A. Burmester (111), Anthony J. DeMartino (9), Ellen Tagariello (43), Gus Sclafani (25), Fred G. Hof (1), Walter A. Matuza (2), Samuel Roselli (2), John F. Sims (25), Donald W Barker (267), Frank Neri Jr. (6), Frederick D. Roemer (5), Hazel M. Nilsen (Grumm. Allied), Russell Hardwick (Grumm. Allied), Ruth Blankenship (Grumm. Allied). ■

Navy Bids Farewell To EXCAP Prowler

There was more laughter than tears at a recent mock "wake" for the last EXCAP EA-6B Prowler at NAS Whidbey Island (Wash.). Members of the Prowler's final squadron – the VAQ-133 Wizards – held an old fashioned Irish wake to bid a "spirited" farewell to the aircraft.

The group raised its voices in a song written specially for the occasion and offered toasts to the aircraft's gloried past on its last day as a member of the fleet. The Wizards were the first squadron to deploy the EXCAP version of the EA-6B Prowler.

The Prowler was the 15th and last EXCAP to be returned to Grumman for modification to the ICAP-2 configuration. All teardown, modification and reassembly work on the aircraft will be done at Calverton Operations on Long Island. Besides cleaning up the effects of more than 10 years of operational service and thousands of hours of flight time, Grumman will rewire the entire aircraft. In addition, the modified aircraft will get all the latest systems that are included in production ICAP-2 aircraft.

The EXCAP Prowlers were originally delivered to the Navy in January 1973. They were the first updated version produced by Grumman after the original EA-6B, which had gone into service two years earlier. The last Prowler to undergo the conversion will be returned to the Navy in March 1986. ■

And Now The Wait

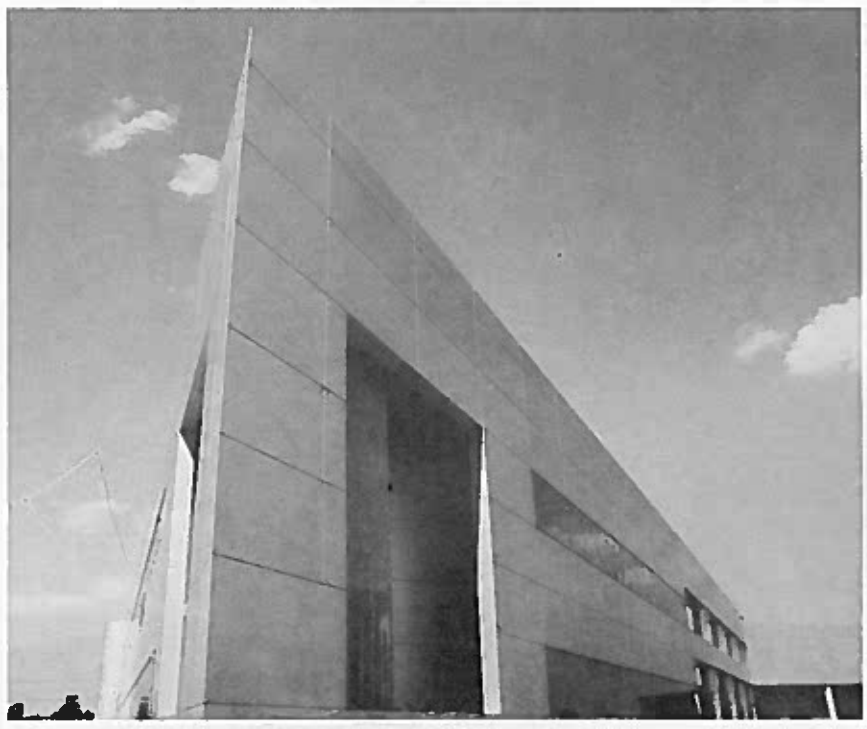
Grumman recently delivered one of its largest proposals ever – for the $250-million-yearly Space Transportation System Operations Contract (STSOC).

On its spine, the voluminous proposal measured 75 feet from the first to the last volume. It weighed in at a mere 2,000 pounds. The proposal was trucked in a shipping container from the printer to Kennedy Airport, where it was flown via a 747 to Houston. Following an overnight stay at Grumman Houston, the big parcel was delivered to Johnson Space Center (JSC).

Through STSOC, JSC will consolidate work now done by 16 separate vendors. The winning contractor will be announced in September, and work will begin on January 1, 1986.

Over 100 Grummanites were on the STSOC team at its peak, as well as about 20 from Singer-Link and five from American Airlines Training Company. Those two companies are teamed with Grumman on its bid. ■

Before the VAQ-133 Wizards shipped the last EXCAP EA-6B back to Grumman for an ICAP-2 update they autographed the plane's fuselage.



GDS Puts Final Touches On New Building

Though the finishing touches are still being added to the Data Systems Division's new building in Holtsville (L.I.), some Grummanites have begun moving into the new computer center.

When the building is completed this summer, over 300 operations and support people will transfer from GHQ in Bethpage to the new building. Several new mainframes are being installed at the facility. One mainframe will be transported from Bethpage.

The Holtsville facility will primarily house business operations such as information management and financial services, as well as storage and backup facilities for internal Grumman users. Scientific operations will remain in GHQ.

Located on the north service road of the Long Island Expressway (Exit 62), the 175,000-square-foot building has a lower concourse area and two floors of offices.

The building will also provide much needed room for growth. In anticipation of future expansion, Grumman purchased two adjacent parcels of land for a total of 44.9 acres. ■

Grumman Boats continues to grab a larger and larger share of the aluminum boat market. It now offers 10 models.

Grumman Boats Firmly Anchored In U.S. Market

Grumman Boats continues to sink the competition with strong sales during the 1985 model year.

The latest six month results show unit sales for aluminum boats are up 126 percent above the 1984 model year through February. The 1985 model year began last August and ends this July.

Bob Steinway, vice president and general manager of Grumman Boats, says the increase in sales is not from industry growth, but rather from Grumman capturing its share of the current market.

"Overall, the aluminum boat market is down 12 percent because people are buying larger fiberglass boats this year," says Steinway. "With these market conditions, our continuing growth shows that Grumman is cutting into the competition."

Steinway reports that Grumman Boats has netted approximately 12 percent of the aluminum boat market in the United States. Starcraft, the recognized industry leader, claims a 15 percent share of the market.

"Three years ago, Grumman was barely visible as an aluminum boat manufacturer," says Steinway. "In 1982, we only sold 600 boats nationwide. This year we should top 9,000 units."

To maintain that momentum, Steinway says Grumman Boats will introduce three more models to round out its boat line. For the 1986 model year, Grumman will add a 17-foot Bass boat, an 18-foot runabout and 16-foot V-shaped fishing craft. This summer, Grumman will produce 39 models of aluminum boats.

"With these additions we're very close to our goal of offering a full boat line. Most future changes to the line will be primarily cosmetic," he says.

Steinway believes Grumman will continue making inroads into regional markets because it has a manufacturing base in the Northeast, South and West. During 1986, aluminum craft will be produced in Marathon, New York; Arkadelphia, Arkansas and Corcoran, California.

"This regional base has made us attractive to dealers," he says. "For the first time in many years, dealers are calling us for a chance to represent Grumman – it's a nice change." ■

Grumman Gung-ho In Bid For Next-Generation Army ATE

Grumman's Electronics Systems Division is in the running for a multi-million dollar contract to build automatic test equipment for the U.S. Army.

The next generation of Army test equipment poses quite a few challenges for the designers. The Intermediate Forward Test Equipment (IFTE) must be able to test the whole range of Army weapon systems – including tanks, communications systems, missiles and helicopters.

Earlier this month, Grumman submitted its proposal for for phase two of the IFTE contract. The Army has set a ceiling of approximately $35 million for phase two and is expected to announce the winner in September.

Grumman is teamed with Raytheon Corporation, a major Army contractor. One of the early weapon systems the IFTE is targeted to support – the Hawk missile – is produced by Raytheon.

The 27-month contract entails the design, development, fielding, and testing of the IFTE system. The production contract would be worth considerably more, depending upon the quantity of IFTE systems the Army requires. A very conservative estimate would be in the hundreds, says Bob Nafis, president of the Electronics Systems Division.

Grumman's competitor for the contract is RCA. Three earlier competitors – Emerson, General Dynamics, and Boeing – dropped out of the race. Each of the five was awarded a phase one study contract in 1983.

"We believe that our record of on-time deliveries and the performance of our products over 25 years of military and commercial ATE experience make Grumman the company to meet the Army's objectives," says Nafis.

He also notes that the recent assignment of the ATE operation to a new division reflects the corporation's long-term commitment to ATE product line and ensures the IFTE program will receive the attention it deserves.

"Also evidence of our commitment is the company investment of an additional one million dollars to continue our work so we hit the ground running at a contract award in September of this year," Nafis adds.

Charles Esposito, Grumman's Army IFTE program manager, notes that the Army's two primary requirements pose a big challenge. First, IFTE must be able to test a wide range of Army weapon systems.

"The Army uses a great variety of systems, including a vast array of smaller systems," he says. "And one of the Army's needs for IFTE is the ability to reconfigure. Since they have such a wide spectrum of equipment, it's very important that automatic test equipment be reconfigurable over that entire spectrum."

The Army's second goal is for IFTE to function at the front line of defenses. For that reason, the system needs to be mobile, rugged, and compact. The Army now sends malfunctioning weaponry back to the rear and depot levels for testing and repair.

"That's a long process," says Esposito. "It ties up a lot of assets."

Based on the results of the studies, the Army has devised a detailed concept of what bidding contractors' designs should encompass. IFTE includes two main subsystems: a lightweight (30 pounds) briefcase-size Test Set for the technician-soldier in the field, and the Mobile Shop Test Facility, a computer bench housed in a 12-foot shelter on a 2.5-ton truck.

In addition, the Army wants a computer bench unit for use at test-program set development sites, and in factories that manufacture Army electronics. The Army is aiming for commonality between both.

If Grumman wins the production phase of the program, components would be produced at Great River Operations. "One of the strengths of our proposal was that Grumman has the resources in place to do the job – the plant, the demonstrated design, and all the engineering people," notes Esposito. ■

Travelers On The Move

If you are covered by Grumman/Travelers Group Health Insurance, it's time to make a change in your address book.

Travelers Insurance has moved from Garden City to the Travelers Financial Center, 90 Merrick Avenue, East Meadow, New York 11554. The new number to call with inquiries about group health claims is (516) 296-2800. ■

Obituaries

John F. McArdle, Program Planning and Controls, Plant 66, died April 23 at the age of 59. He had been with the company since 1967 and resided at 129 Pearl Dr., N.E., Milledgeville, Georgia.

John B. McGloin, Production Programs, Plant 1, died April 9 at the age of 66. He had been with the company since 1965 and resided at 270 Ellery St., Brentwood, N.Y.

Dorathea Rhodes, Secretarial Services, Plant 1, died April 21 at the age of 62. She had been with the company since 1969 and resided at 2 Oasis Place, East Northport, N.Y.

Grumman Awaits Word On Huge Air Force Radar Contract

Melbourne, Florida Site Chosen For Joint STARS Division, Pending A Contract Award

You've probably heard it often on the seven o'clock news, or read it in a newspaper story on defense issues. The Soviet Union and its allies outnumber the West in ground armor – tanks and soldiers.

Until now, the only feasible defense against a blitz from the East has been nuclear weaponry. But a new system for which Grumman is currently bidding would provide a non-nuclear alternative.

The system is known as Joint STARS, which stands for Joint Surveillance Target Attack Radar System. Joint STARS is being developed jointly by the U.S. Air Force and Army. The full-scale development contract is scheduled to be awarded in mid-August.

Joint STARS represents a milestone in several respects. For one, it will be the largest development contract awarded by the Air Force's Electronics Systems Division. Also, if Grumman wins, this would be its largest-ever Air Force development contract.

"Grumman wants to do business with the Air Force," says Al Verderosa, vice president, Aircraft and Marine Programs. Verderosa will head a new Grumman Joint STARS Division should the company win. The division will occupy a yet-to-be-constructed office and technical building in Melbourne, Florida.

"Grumman has already proven itself as a viable contractor to the Air Force, through the systems integration, design, and testing of the EF-111," Verderosa continues. "That was our first big Air Force contract. We want to propagate that into something larger."

Grumman is teamed with Norden Systems, a United Technologies company headquartered in Norwalk, Connecticut. Boeing would be on board as a subcontractor, since the Joint STARS radar will be carried aboard the C-18 – which is a modified Boeing 707. Competitors are Hughes Aircraft and Westinghouse.

Verderosa says the exact amount the Air Force plans to spend on Joint STARS is still undetermined, since it hasn't specified just how many planes would be equipped with the system. "Conservatively, the dollar value of the Joint STARS program would total in the billions of dollars, including production," he notes.

Joint STARS combines an airborne multimode radar with high-speed digital signal/data processing, display, and either airborne or ground-based control. It would detect and track the rear line of enemy armored formations at long range, and would enable attack aircraft and both ground- and air-launched missiles to precisely home in on targets.

A key benefit of Joint STARS will be its ability to pinpoint moving targets. Only today's most sophisticated missiles, with their own guidance hardware, are now able to accomplish this. Such missiles are very costly. Joint STARS will enable the use of less sophisticated missiles.

Joint STARS employs some of the same concepts developed on the Radar Guided Weapon System and PaveMover, two earlier prototype programs at Grumman. Tests of the PaveMover radar in the New Mexico desert a few years ago were highly successful.

The PaveMover guidance system was able to correct deliberately mistargeted missiles. This was even the case when the missile went many meters further off course.

A core group of 65 Grummanites now works on Joint STARS. If Grumman wins, they will temporarily set up shop on Long Island. When that happens, a Florida construction crew will also be given the go-ahead on the Melbourne office.

The contractor has not yet been selected, but the site has. It covers 50 acres and is adjacent to the Melbourne Regional Airport. The building will be completed in two phases – the first to open about eight months after the contract commences, and the second six months hence.

Verderosa cites a number of factors that led to the choice of Melbourne as the Joint STARS site. The mild local climate was one factor, which will pay off when the system is flight tested. Furthermore, the company has presence in Florida. The proximity of its other work centers – at Stuart, Technical Services in Titusville, and St. Augustine – is an advantage.

Another advantage: Melbourne is in a high-tech part of the state. Not only is Kennedy Space Center a stone's throw away. So are such companies as Harris Corporation and Martin-Marietta. There are technologically oriented colleges nearby, too.

If Grumman wins the Joint STARS contract, it would construct a building adjacent to the Melbourne Regional Airport in Florida.

"Joint STARS is a very high-tech program," Verderosa notes. "There will actually be very little manufacturing involved. So, Melbourne was a logical choice."

The plans call for Grumman's Joint STARS program to have 600 to 650 division employees. Roughly 200 would be Long Island transfers; the rest would be new hires.

About 250 of these people will be engineers, and they will run the gamut of disciplines. The single largest group will be systems and software engineers – about 200 of them, Verderosa says. Other large groups will include integrated logistics support, configuration data management, flight test, and instrumentation specialists.

Recruiting high-demand professionals is difficult to begin with. Even for its Long Island sites, Grumman often has to go outside the New York area to find these people. And it's difficult to convince non-Long Islanders to relocate to Long Island, due to the high cost of living. Verderosa says it should be easy to convince engineers to relocate to sunny Florida. For one thing, there is no state income tax.

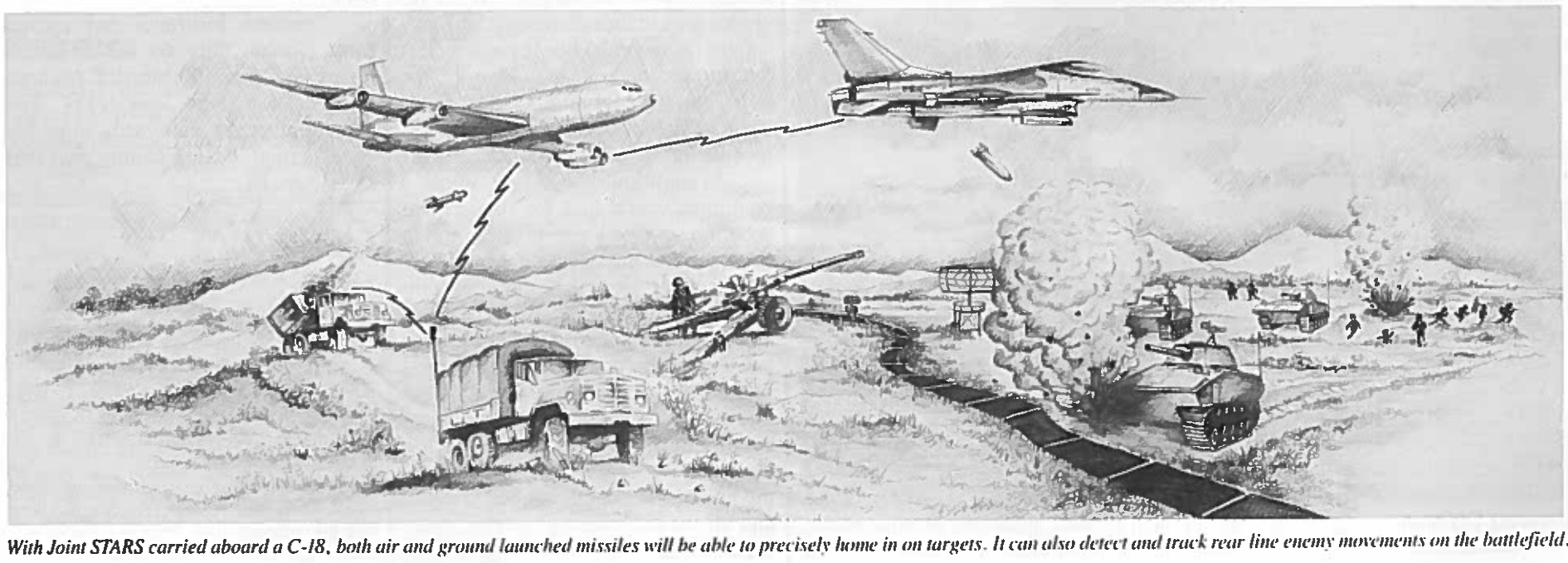
"We've had incredible results with our recruitment efforts so far," says Verderosa, citing a successful "open house" in the Melbourne area. He also notes that most of the core group of people now working on Joint STARS are enthusiastic about moving to Florida – at least, more so than they would be about moving to, say, North Dakota.

"Some of our people will be reluctant to move, but the big plus is the area," he notes. "The people are all very dedicated to the technology. Some of them have been working on it since we first began working on RGWS, in 1973."

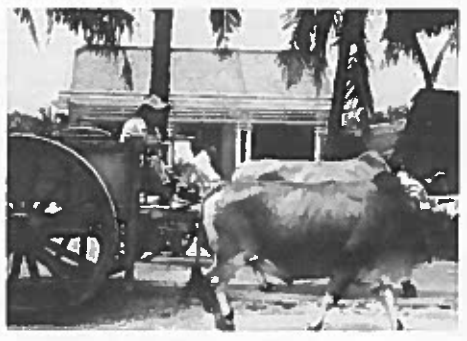
Grumman Aircraft Systems division will probably manufacture the installation hardware – in essence, cables, consoles, shelving, et cetera. Final assembly at Melbourne will be akin to that of Plant 4-Bethpage or Plant 7-Calverton: installation, systems checks, and finally, flight tests.

Verderosa hesitates to make a comment on the outcome of the bidding. "You could say I'm cautiously optimistic," he says. "Grumman has the advantage of having worked on PaveMover, but the competition is formidable." He adds that the program is fairly uncontroversial politically, as new weapons expenditures go.

"Joint STARS will mean very interesting work, and very challenging work," he says. "It's something we want very badly. Obviously, we want to get closer to the Air Force. We feel the technology is right up our alley." ■



With Joint STARS carried aboard a C-18, both air and ground launched missiles will be able to precisely home in on targets. It can also detect and track rear line enemy movements on the battlefield.



Grummanite Ray Mason took these photos during his '67-68 tour in Vietnam. He served in an Air Force security police squadron. Special details included accompanying medics on their field trips into the Vietnamese villages. A Grummanite since 1980, Mason works in Public Affairs-Motion Pictures.

Vietnam Vets: 'It Takes Time To Heal Bad Wounds'

Nearly three million young Americans fought the hidden enemy in the rice paddies and jungles of Vietnam. As their fathers did before them, they fought in service of their country.

Unlike their fathers before them, they were not welcomed home as heroes by their fellow Americans. There were no wild block parties, and no tickertape parades. The trip down the "Canyon of Heroes" didn't take place until May 7, 1985 – a bittersweet *tribute 10 years after the fall of Saigon.*

While this month's 40th anniversary of V-E day is celebrated as a victory of good over evil, Vietnam continues to stir mixed emotions in America. It was a war America fought not only in the rice paddies of a southeast Asian country, but on college campuses, in the media – and in people's consciences. Most affected by this juggling of emotions is the American vet who served in Vietnam.

Close to 19,000 Grummanites have served their country in the U.S. Armed Forces. While a good number of them are veterans of World War II and Korean, only 261 are veterans of the Vietnam Era. Since the draft ended in 1973, a majority of younger Grummanites have no military experience.

"While growing up in Brooklyn, I wanted to follow in my father's footsteps . . . to be patriotic and serve my country," says Grummanite Steven Casella. He volunteered and served in an Air Force combat support group at Tuy Hoa from October 69-70.

Steven Cassella volunteered in '69 and served in an Air Force combat support at Tuy Hoa. Today, he is a senior electrical installer on the C-2/E-2 in Plant 4.

"When I was drafted, I took it in stride," says Fred Wilcox, a personnel assistant at Stuart Operations (Fla.). "I said to myself, 'I will go. This is my country and I will do the best I can . . . and I hope to return.'" He was in Vietnam from '65-66 as an Army communications expert.

The average age of the American soldier in Vietnam was 19 – seven years younger than his father had been in World War II. "It was the first war where the majority were teenagers. When they went to Vietnam, a lot of them hadn't even held a full-time job yet," says Casella, now a senior electrical installer on the C-2/E-2 in Plant 4, Bethpage.

> 'And then there are the morbid details like making a will.'

Recalling the weeks leading up to his Vietnam tour, Herb Scull says that leaving his family and starting a hardship tour in a war zone gave him a lot to think about. "And then there were the morbid details – like making a will," says Scull. "That's tough when you're only 22 years old." Now director of new products for Grumman Emergency Products in Roanoke, Virginia, Scull served as an Army medic about 50-60 miles south of the DMZ from 1968 to 1969.

There were no safe places in Vietnam, even for those with desk assignments in Saigon or jobs in the supply depot in Da Nang. Injury or death could happen at any moment of the day or night.

"You were always up and down emotionally. You never knew when your base would be hit with rockets, or be ambushed by Charlie," says Paul Heagy of Grumman St. Augustine. Recently retired from the Navy after a 31-year career, Heagy served as a corpsman for the Marine Air Groups in Chu-Lai on the Vietnam coastline from 1966-67.

During a one-year tour, a "grunt" was in combat almost continually. The nights were long. He was constantly endangered by enemy mines, booby traps, and snipers. Then there were the air attacks. All of this in addition to the actual direct battles with the Viet Cong. In contrast, Philip Caputo, author of *A Rumor of War,* has noted that while the Marines of the Pacific Theater were celebrated for their victories, on the average they fought no longer than six or eight weeks during all of World War II.

Grummanite Ron Fais served in the 1st Infantry Combat Support Group during '69-70. "Wherever the tanks went, we followed and supplied them with fuel," says Fais, now a media support supervisor for Data Systems in GHQ. "The trip out was not as bad as the trip back. The empty fuel tankers were loaded with explosive fumes. You always feared being hit by rockets and snipers on the way back."

As their tours grew to an end, the "short timers" got nervous. Wilcox and Scull remember well their last 90 days of their tour. "The only time I was really afraid of dying was when I was on the cargo plane going down the runway on my way home," recalls Wilcox. "After 12 months in Vietnam, all I could think of was that someone is going to shoot this big cargo plane down."

Now director of new products for Grumman Emergency Products in Roanoke, Va., Herb Scull was an Army medic in Vietnam from 1968-69.

"With 90 days to go, there was a lot of anticipation. A short-timer reflected a lot on that. You were more careful. You didn't take chances on missions and fire-fights," says Scull. "I remember about two weeks before I was going home, we were watching a movie outdoors which was a real treat. Then, mortars started dropping in. I dove into a ditch filled with water and mud, and kept saying to myself, 'not now.'"

In other wars, American soldiers measured progress by conquering territory, capturing town after town on the road to victory. By contrast, in Vietnam grunts captured and recaptured the same ground. The only measure of success: the infamous "body count."

> 'You were always up and down emotionally. You never knew when your base would be hit with rockets, or be ambushed by Charlie.'

Many Vietnam veterans contend that the American soldier's hands were tied in Vietnam. "In Vietnam, there were too many rules and regulations. You could never win in that situation," says Scull.

Ed Eckenrode of Glen Arm, Md., who thought of making the Army a career in the Sixties, saw plenty of action as a grunt. "But not as heavy as compared to the guys serving near the DMZ," he says. "It was mostly small conflicts, hit and run with the Viet Cong from '66-67.

"As the years passed, I disagreed only with the tactics being used over there. There were too many restrictions," says Eckenrode, now a numerical control machine operator at Plant 56. "There were places you could go armed, but you were not allowed to fire your weapon – even if someone shot at you. And a lot of places, you were not allowed to be armed at all. And that was dangerous."

"American soldiers didn't know

(Continued on page 6)

'There Were No Safe Places'

From 1969-70, Ron Fais of Grumman Data Systems served in the 1st Infantry Combat Support Group. He drove fuel tanker to armored tank divisions in Vietnam.

Ed Eckenrode, a numerical control operator at Glen Arm, Md., was a "grunt" in Vietnam from '66-67.

(Continued from page 5)

where or when someone would shoot at them. They went over to win and continue the American tradition. Then, they came home with their tails between their legs to an unfriendly reception," says Heagy.

Instead of a hero's welcome, the vet was blasted by the hawks for not winning the war and scorned by the doves just for taking part. Casella and fellow Grumman Vietnam vets blame the media in part for the bad rap against the returning vets. "It was the first war videotaped and shown in families' living rooms every night. The media seemed to side with the Viet Cong," says Casella. "The American soldier was always shown as the aggressor. They were the bad guys."

Upon his return to the States, Wilcox went quietly back to his job on a cattle and horse ranch in Florida. "At the time I returned home (in '66), no one wanted to be associated with a Vietnam vet. A lot of people thought those who served in Vietnam had bent wheels ... that their heads weren't screwed on right," says Wilcox.

"To this day, all you hear about are the 20 percent who are addicted to drugs or have mental problems adjusting to civilian life. What about the 80 percent of us who have adjusted?" says Eckenrode.

Upon his return to the States, Heagy was assigned to the Presidential Unit in D.C., "just in time to hear the protestors yelling 'Hell no, we won't go.' That's a fine attitude, I said to myself. What about the guys who are giving their lives for their country?" says Heagy. "When I went to the University of Maryland campus for night classes, I could still smell the tear gas that was used during a demonstation earlier in the day. That was a hard time for me."

> 'What about the 80 percent of us who have adjusted?'

"Sometimes, I think it was a waste of time," reflects Wilcox on his tour in Vietnam. "However, I wish everyone had settled down and listened. I think a lot of demonstrators didn't understand, and really didn't know what they were demonstrating about."

During the Vietnam War, the practice was to get the returning soldiers back home as quickly as possible: the "foxhole to front porch" approach.

"After my tour ended, I was back in my old neighborhood within 19 hours. There were no celebrations. Parents and girlfriends were the only ones who cared," says Casella.

"When I returned home, I was embarrassed," recalls Charlie Bosch of Grumman Data Systems contracts administration in GHQ. "After my '66-67 tour, I was happy to be home safe and sound. A lot of my friends died over there. I wanted to put it out of my mind. I couldn't talk about Vietnam or look at the hundreds of pictures I'd taken there until about five years ago."

"It took a while to adjust. I was proud to serve and do a job others wanted to run away from. When I returned home, I was very hyper ... a fighter, but I'm much calmer now," says Fais.

America needed time to adjust, too. The changes in attitude can be seen right on the television sets and in movie houses. In the mid-Seventies, Vietnam vets were portrayed as junkies and deranged killers. Case in point: Travis Bickle, the psychopath in "Taxi Driver."

Today, the Vietnam vet is more favorably depicted as the survivor-hero. For example, Tom Selleck plays a vet on "Magnum P.I." and "The A-Team" is a group of Vietnam vets using their skills obtained in 'Nam to fight evil in the U.S.A. Recent movies like "Uncommon Valor" and "Missing in Action" are in sharp contrast to earlier films such as "Apocolypse Now."

Vietnam vets are also getting recognition from the American people. Just a few weeks ago, an estimated one million people belatedly thanked the American Vietnam vet with a tickertape parade in New York City. Today, the number one visitors' attraction in Washington, D.C., is the Vietnam Veterans Memorial. It is currently drawing 100,000 a week. This Memorial Day weekend, thousands of Vietnam veterans will march in hometown parades across the country.

It has taken a while for America, but the Vietnam vets say better late than never. "People are finally realizing that it was not the Vietnam vets' fault," says Casella. "It was a political thing. We served our country. The recognition is long overdue."

> 'I couldn't talk about Vietnam or look at the hundreds of pictures I'd taken there until about five years ago.'

"People recognize that we didn't win the war, but now our effort over there doesn't go unnoticed," adds Wilcox.

"There were bad wounds in America. It takes time to heal bad wounds. But I'm glad Americans finally decided to say 'Let's do something for these guys,'" says Fais.

"I hold no resentment for the American people. The U.S. government got us into a situation we couldn't win," says Scull.

"But I do resent it being called the Vietnam Conflict. It was a war like any other war. People died. I just know that we should never get into another war unless there is a damn good reason." ■

Paul Heagy, a lieutenant in St. Augustine's Security Department, recently retired from the Navy after 31 years of service.

An Army communications expert in Vietnam from 1965-66, Fred Wilcox works at Stuart Operations in Florida as a personnel assistant.

A VC New Year To Remember

Feb. 1, 1968

Dear Wes,

Received your letter, good to hear from you. Glad everything is going smoothly. Good show for the America.

Work is hard, as usual, and the hours are long. On 30 January I had my first baptism of fire. We had a plane down in Da Nang; plus that, the Company wanted me to make a line flight. Route of travel was DaNang-Ticonderoga-Cubi. After three hours of flight we reached Da Nang.

We received a radio message from DaNang stating, "We are under fire. Do not land. Only tactical aircraft can come in." Our pilot replied, "We have parts and help for downed C-2A." DaNang answered, "Come on in." We could see the SPADS and Choppers bombing and strafing the Viet Cong about 500 yards off the runway. We dove in and flared out – if that's what you want to call it – and touched down at 120 knots. Man, I thought reverse would never take hold!

When we shut down and opened the hatch it sounded like the Fourth of July. Bombing was all over the perimeter of the field. Approximately 100 yards away an ammo dump was hit and ordnance was going every which way.

The firing seemed to get heavier, the bombs louder. The huts down past the ammo dump were burning. Well, we waited a few hours, and did what we could for the downed bird. The pilot said let's go. I asked him if he intended to go to the beach side of the runway for takeoff. I told him 3,000 feet is plenty for the load we got.

We went toward the end of the runway where the firing was coming from. Well, Wes, I believe that was the first high-speed takeoff in a long while. On the ground, many people were watching. Down by MAG 11 or 12 I saw two sand crabs, one had a blue polo shirt on. Maybe it was the other Grumman sand crabs. If you write Bill Meyers, ask him if he saw that crazy C-2 COD.

We landed on the Ticonderoga and in the wardroom, the pilot told me, "I didn't think the C-2 could do that." "No sweat, Commander," I said and went on "eating" my coffee. I don't know who was more shook, him or me. I don't think I'll ever forget that VC New Year.

Well, Wes, give my regards to all. Can not wait until I see Barbara and the kids.

Good luck,
Jack Caffrey

During 1968, Jack Caffrey was a Grumman C-2 field rep aboard the USS Coral Sea. *He still lists the Tet New Year as one of his most harrowing experiences as a Grumman field rep. Today, he is a senior field service rep stationed at NAS Norfolk, Va. Also at Norfolk is Wes Moseman, Grumman's East Coast Area Manager for Field Operations.*

What 'Nam Was Like For One Field Rep

Charlie Bosch of Data Systems contracts administration was in Vietnam from 1966 to 1967. He served in an armored division as a tank driver.

"I went over there when people were getting really mad at each other," recalls Grummanite Paul McDermott. He arrived in Vietnam just in time to watch the start of the Tet Offensive from his Saigon hotel balcony.

From 1962-73, Grummanites served as OV-1 and A-6 field service reps in Vietnam. Forty reps were stationed in Da Nang, 22 in Saigon, eight in Chu-Lai, one at Hue/Phubai and one at Nah-Trang. Except for those based in Saigon, all lived on Air Force, Army or Marine air bases. Several reps re-upped for an additional 12-month tour. Not McDermott. As head of Grumman OV-1 Mohawk reps in Vietnam, he signed up for five tours in a row from 1967-72.

Ever since Harry Larson submitted the first field report on the FF-1 in 1934, Grumman has had service reps in the field. As McDermott puts it, "you bought our aircraft, you bought our service." It's the field rep's job to help the customers keep their Grumman planes flying – in peace and in war.

Though the 8,000-mile logistics loop did cause headaches at times, the in-country Mohawk field support crews are proud of the OV-1's remarkable 83.5 availability record in Vietnam from 1962-72. McDermott notes that record is for airframe availability. "Once you took into account the sensors and black boxes, that rate slipped."

At the height of the buildup, 116 Mohawks in Vietnam served as the backbone of the Army's battlefield surveillance force. Flying low over enemy-infested terrain, the Mohawk proved to be a reliable reconnaissance platform.

"One pilot had 19 missions in a row where he was hit but still was able to fly back to the base," says Col. Max Davison, formerly commander of Defense Contracts Administration at Stuart (Fla.) Operations and now retired. "One time, I had 1,300 holes in my Mohawk – and she still got me back."

The rugged constitution of the Mohawk proved to be a godsend to flight crews – especially when the Viet Cong got heavier weapons and learned how to use them against low-flying aircraft. One Mohawk was nicknamed "Old Yeller" because of all the zinc chromate painted over its battle scars.

From his home base in Saigon, McDermott flew more than 1,000 flights to Army air bases throughout Vietnam and Thailand and overflew Laos and Cambodia during his tour – not counting Huey helicopter rides. Those were too numerous to keep track of. "I didn't have it as bad as our A-6 guys at Da Nang and Chu-Lai. That was crude living. You work with the Marines and live like the Marines. You never settled down. But they had decent bunkers."

'I didn't have it as bad as our guys in Da Nang.'

Though airfields were definitely a target for attack by the VC, McDermott always felt safer on a military base. "In Saigon, I was living in a civilian apartment," he says. "And you had no protection in Saigon. During the little Tet in March 1968, I was cut off from everybody for an entire week. I couldn't watch both my front and back doors, so I slept on the roof. The guy who had the apartment before me left olives and sauerkraut, and that's what I ate. I got pretty hungry. From then on out, I got smart and I ate well. I'm probably one of the few people to ever gain weight in Vietnam."

For protection, the U.S. Embassy permitted Grumman reps to obtain pistol permits in South Vietnam. "But we prefered to use Mace," says McDermott, who now works in Army Marketing.

"I was scared every day," says McDermott. "I never slept well at night. The only time I did was on a military base. If something happened there, you could always run to a bunker.

"Most nights, I'd hear people on my rooftop at three o'clock in the morning. Not the Viet Cong, but 'cowboys.' If you were American, you were always good for a passport, watch, camera, tv, etc. As a consequence, there were always break-ins and robberies," he recalls. "The closest call I had was when two South Vietnamese pilots held me up with two .45s. and tried to kill me. Another time, I had the South Vietnamese military police put a gun to my head because I was trying to get on a military base for security during the Tet offensive. I didn't have the right pass."

It was an ongoing game with the South Vietnamese to get passes. "Say you were travelling upcountry the day the pass expires," says McDermott. "You'd return and they made you wait a week or two for a new one. They tried to punish you just like you'd do with children."

In Vietnam, both Grumman and the Army had dress codes. When in Saigon, you had to wear civilian clothes. When you travelled in the field, you'd wear an Army uniform. "Due to the problem with gate passes, I always wore a flight suit and a cap with an Aston-Martin pin on it . . . it looked like a full colonel's eagle from five yards away. I'd drive through the gate of a military base and they'd salute me," says McDermott.

'I could walk away from it any time I wanted.'

He contends that you had to play the games to survive. "You go out of a country illegally, then come back illegally. If you flew out commercial air, and came back on a military plane, you'd be stopped and asked 'how did you get back in?'"

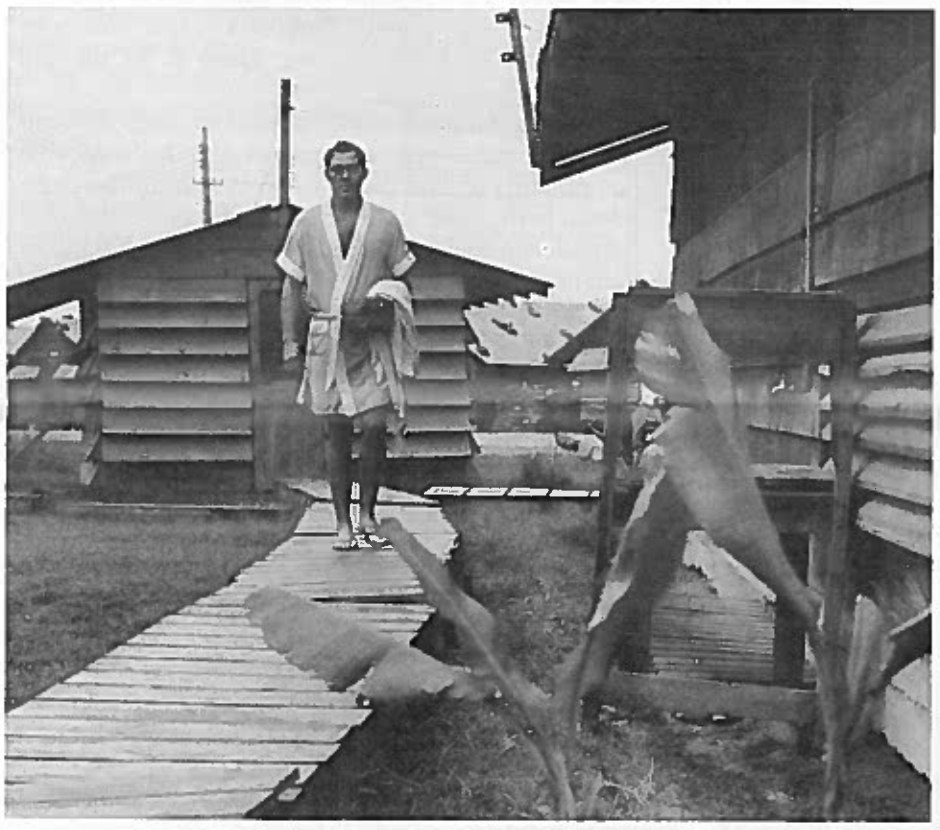
Problems occurred when the Navy would fly a Grummanite off a carrier so the rep could get back to the States for a family emergency. "They arrived in Saigon, and basically they were not there – legally," says McDermott. "The South Vietnamese were going to put them in jail for entering their country illegally. I used to review how I could get them out, go to the protocol and military guys, and see if we could smuggle them out of country."

During his five years in Vietnam, McDermott remembers the American soldiers getting frustrated with the situation in Vietnam. "Towards the end, a lot of guys didn't want to fly. They began to sense a lost cause."

As public opinion against the war grew at home, it turned into a political mess. "One day, the U.S. would begin bombing raids, the next day it would stop. So, the military would ask me to check on something for them at the next base. They didn't want to lose their lives at the end of the war. I ended up being a messenger boy, but I didn't mind."

McDermott notes that the American soldier had no choice but to fulfill his tour commitment. "He could get killed at any time. As for me, I could walk away from it any time I wanted."

He didn't until the Army pulled its last Mohawk out of Vietnam in 1972. ■



In Da Nang, Vietnam, it was a long hike to the showers. Ask Grumman field rep Steve Foster (pictured above). In the background can be seen sand bags positioned on the barrack roof. They helped hold the roof in place during typhoons. Below, Grumman rep Neil Lockwood assisted with adjustment to propeller drive on Grumman Flagstaff hydrofoil boat on patrol near Da Nang.

World Of Composites Continues To Revolve Around Pl. 66

Industry's first dedicated composite facility celebrates 10th anniversary next month

"I can remember when we first came down here from New York 10 years ago. We were touring the building – then a big empty shell – and a snake slithered out from under some boards and shot across our path. Well, you should have seen all of us New Yorkers jump, and then laugh like heck at ourselves. It was an inauspicious beginning," says Gene Donovan, Plant 66 Fiberglass foreman.

Inauspicious as it might have been, that stroll through the abandoned dress manufacturing plant was the beginning of Grumman's composite and bonded materials manufacturing center in Milledgeville, Georgia.

The first dedicated composites manufacturing facility in the aerospace industry, Plant 66 celebrates its 10th anniversary on June 2. Since that summer in 1975, the facility has come a long way.

A visitor's tour of the plant these days is not likely to turn up any snakes slithering across the floor. Instead there are immaculate and brightly lit shop areas where workers and visitors alike are required to wear white lab coats to protect the special composite materials and tools.

Donovan was one of the original group of 33 Grummanites who traveled to the sleepy Georgia town to get the ball rolling at the new plant. "We had to start from scratch and put together a new facility in an unfamiliar environment," says Donovan.

In the beginning, the Milledgeville operation produced mainly secondary and cosmetic parts out of fiberglass and ABS plastic. At that time, the plant employed 114 people, half of whom had been transferred from New York. Today's work force totals 654 people, mostly local hires from Milledgeville and the surrounding counties.

The plant occupied approximately 170,0000 square feet when Grumman first leased it. Most of that space was taken up by a huge conveyor belt that had been used by the former occupants to move women's dresses through a production line.

The facility now covers 492,000 square feet and is situated on over 100 acres of Grumman-owned land. It houses some of the most advanced composites manufacturing technology in the industry, including: high-heat high-pressure autoclaves; Gerber automated shape-cutting tables; advanced ultrasonic and x-ray inspection machines; and water-jet cutting tools.

Inside the quietly humming shops, layup mechanics resemble surgeons as they bend over their work benches in long lab coats. They carefully lay plies of fiberglass and graphite epoxy tape in intricate patterns on mold forms in order to create the high-strength, light-weight parts that Milledgeville has become famous for.

Milledgeville produces thousands of complex primary structures for virtually every program Grumman has. The plant makes over 12,000 different parts – more than 650,000 annually – for military and commercial aircraft.

Alex French, lead person-Trim Operations, started as a fiberglass trim mechanic and has seen the scope of Plant 66's composite work grow and change over the years. "We always seem to be working on the very latest technology. You see the Space Shuttle on television and in the newspapers every day, and there you are every day working on parts for the Shuttle program. You can't help but be proud," he says.

'When we looked at Milledgeville, we knew it fit the bill perfectly.'

Mike Salvador, program coordination manager, points out that Plant 66 has helped put Milledgeville on the international map. "At an industry seminar in Dallas, I was amazed and quite proud when I mentioned Milledgeville to a representative from Sweden. He instantly recognized the name and said 'Oh, Milledgeville, Georgia, I know - composites!'"

Grumman's decision to locate its composites manufacturing business in Milledgeville was something of a risk, says Salvador. The company was setting up a high-tech facility in an area that did not have any experience with the aerospace industry. It also needed to build a highly skilled work force from a labor pool that had never even heard of composites or Grumman.

Although the final selection of the Milledgeville site was made in late 1974, it was not until June 2, 1975 that Plant 66 began operations. Former Grumman Vice President and General Manager of Plant 66, William Zarkowsky, remembers those early days: "We didn't really have any special ground breaking ceremonies or anything. We didn't have time. There was too much to do!

"Right off the bat we were making parts for just about every program that Grumman had, including the E-2, A-6, F-14, and Mohawk. And at the same time we were hiring and training an entire new work force."

Zarkowsky says the creation of Plant 66 can be traced back to industry studies done by Grumman in 1971. The studies looked at the future of the aerospace industry and pointed to rapid growth in the technology and use of composite materials. At the time, Grumman's composite production work was spread out in several different locations.

"The utilization and importance of composites were increasing at such a pace though, that we knew we would need a place with some elbow room to allow for future growth," Zarkowsky says. "When we looked at Milledgeville, we knew it fit the bill perfectly."

Once Grumman had decided to settle in Georgia, the next step was to get the Milledgeville community used to the idea. "When Grumman came down here, there was some curiosity and even some skepticism by the local people as to what our intentions were and how sincere our commitment to the area would be," recalls Tom Lahey, general manager of Milledgeville Operations.

"The people in this area had been burned before by businesses that didn't last – witness the dress company that had this building before us. But once they saw the kind of company Grumman is – a people-oriented company – they knew our commitment to Milledgeville was for real," he says.

Lahey notes that Plant 66's relationship with

People are the story in Plant 66: (clockwise from bottom) Rosemary Harper, QC inspector; Lovett Brown, QC inspector; and Ray Peterson, layup mechanic.

Milledgeville was modeled with a very specific goal in mind.. "Bill Zarkowsky made it a point to have this facility to become an integral part of the community. He encouraged – and Bill was an expert at 'encouraging' – all of us to get involved in community affairs at all levels."

The payoff for Grumman in Milledgeville has been twofold. It encompasses both the technical success of the facility and the development of admiration and respect for the company in the community.

"The people who work in this plant are never ashamed to wear their badges any place around town," says Bill Holsenbeck, Plant 66 Facilities Superintendant. "In fact, our people are very proud to display the Grumman name prominently because of the respect it gets from everyone in the area."

Holsenbeck was the very first person hired by Grumman for the Milledgeville plant in 1974. "I think they hired me because I was the plant manager for Baldwin Enterprises and still had the keys.

Grummanites, Yankee transfers and local southerners alike, say the company fits into the community as perfectly as Plant 66 itself fits into the rolling red clay hills of central Georgia.

Many of the early local hires say their initial reaction to Grumman was one of curiosity. When she joined Grumman in 1976, Carolyn Bloodworth, lead person in the paint shop, didn't even know what business the company was in. "Before I started here as a fiberglass mechanic in the trim room, I was working as a waitress. The transition from serving lunches to cutting high-tech fiberglass parts for airplanes required some pretty intense on-the-job training."

All new employees go through an intensive training period. The latest formal training program, called Quick Start, was initiated in 1981 with the cooperation of the state of Georgia. Employees take specially designed courses on their own time to learn the many facets of the composites business.

"People are the real story here in Milledgeville. The development of our work force and its skill level have been just incredible," says Lahey. "I can look around the plant now and see people who were barely more than teenagers when they were hired 10 years ago. Today, they can argue the finer points of the composites business with the best of them."

Despite the modern high-tech look to the plant, the atmosphere of the facility is one of "Old South" hospitality and charm. Grummanites here are quick with a smile and a warm greeting delivered with a molasses-thick southern drawl. "I can't think of anyplace else where the concept of the 'Grumman Family' is more appropriate or more obvious than here in Milledgeville," says John Noack, manager of Quality Technical Operations.

'The composites business is still relatively young and the potential for the industry is virtually unlimited.'

Noack transferred down to the Georgia plant in 1981. He was single and unsure of how he would fit in. "Well, I'm still single, but I've been adopted by several of the Grumman families down here and it seems there is no end to the lengths people here in Milledgeville will go to make me feel comfortable."

The old stereotype of the small southern town with its dusty dirt roads, sweltering heat, and hound dogs lazing on white columned porches may have been appropriate in the past, but not today. Milledgeville still has some dusty roads, and a few minutes in the summer sun will tell you the heat and humidity are still sweltering, but there are also many of the amenities not normally associated with small rural towns.

A cruise down the main thoroughfare offers a surprising number of new, and very un-southern, modern convenience stores and fast-food restaurant chains. There are twin theaters located inside the town's sprawling, fully air-conditioned shopping mall.

Yet the Old South charm permeates everything, and places where a visitor can get a hefty portion of home cooked southern food, smothered in gravy, still abound.

Grumman's presence in Milledgeville has been credited with awakening the sleepy southern town to some of the benefits associated with being host to modern industry. The jobs that the plant provides and the salaries those jobs generate has had a ripple effect throughout the entire community.

"Grumman has worked with the state to show them what industry needs, in terms of education offered at the high schools and colleges and technical schools," says Ginny Liles, supervisor-Operations Administration. "Students in our school system these days are being exposed to the kind of instruction that will help make them valuable in the job market."

Liles notes that the changes have not come without the need for some adjustments. "Recently we had our first real set-back when several of our contract programs came to an end at the same time. It meant that we had to lay off 50 people, and that hit everyone like a ton of bricks.

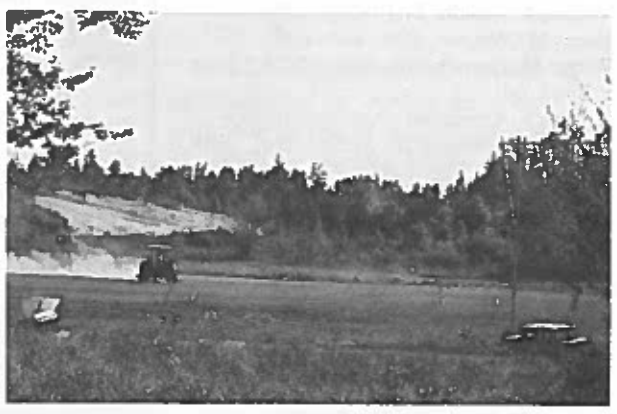
"We've been kind of spoiled here with a decade of constant expansion and growth, so the recent slowdown has caused some rough adjustment for us. But I believe it's really just a temporary plateau for us. With as many irons in the fire as Grumman has I'm sure it's only a matter of time before we take off and resume our usual fast pace."

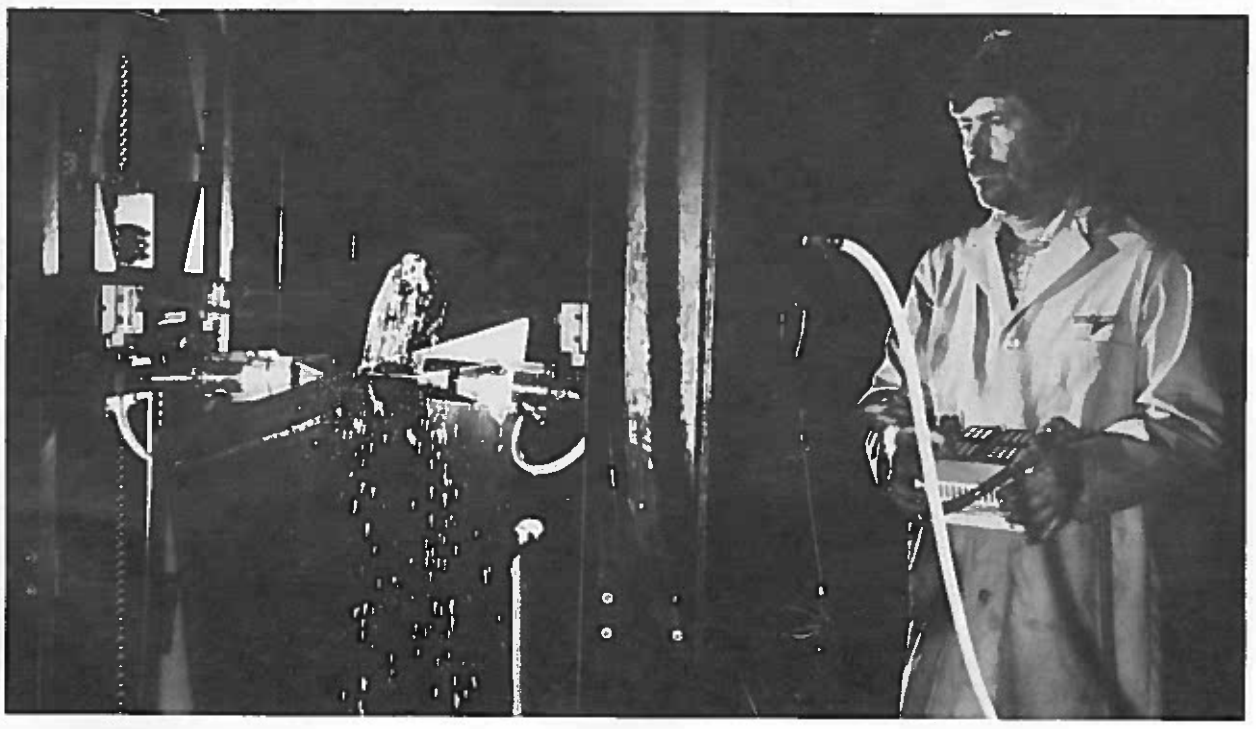
Staying at the forefront of the composites business is Milledgeville's number one concern for the future. "The biggest challenge we face in the years ahead of us is reducing the relatively high costs associated with composites structures so that we can be more competitive in its applications," says Lahey.

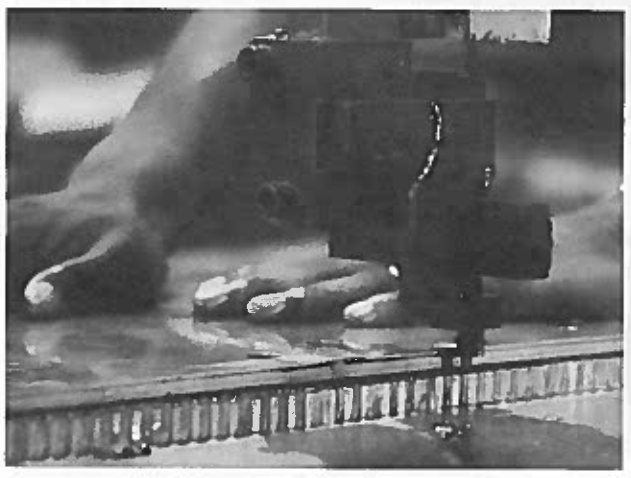
In capturing the next major aerospace job, composites are expected to play a big part. Lahey points out that Plant 66 is going to be a key factor in Grumman's ability to get that job and build it successfully.

"The composites business is still relatively young and the potential for the industry is virtually unlimited. We are in an excellent position at the moment. Our technology is among the most advanced in the business. Our manufacturing and inspection techniques are becoming more refined all the time. Automation is making composites work more efficient and reducing costs. And we have a young, aggressive work force with a very high skill level," says Lahey.

"After 10 years of growth and expansion," Lahey says, "Grumman's Milledgeville operation is still young and vibrant and ready to move – and that can only help make Grumman a stronger competitor in the aerospace industry." ■







On the scene at Milledgeville: (clockwise from right) Plant 66 picnic/recreation fields; Lee Hicks, QC technician; honeycomb core band-saw trimmer; and Nancy Ruquet, layup mechanic.

G. Poletti

B. J. Stafford

D. J. Walsh

P. F. Wilson Jr.

M. H. Howard

A. J. Curtin

R. P. Bisey

L. W. Hoffman

J. A. Becchina

A. L. Caserta

W. F. Vogelsberg

A. M. Kumer

A. Rodman

P. F. Simonetti

Service Milestones

45

Zolton D. Horvath, Fus. Assy., (1)
Philip H. Musa, Mech. Des. (1)

40

Salvatore J. Palazzolo, Inv. Rel. & Cont'l. (30)

35

Joseph A. Calandra, Prod. Plt. Mgmt. (5)
Brian P. Masterson, Public Affairs Mgmt. (5)
Frank A. Brady, Inv. Cont. (6)
Joseph F. Colli, Mat'l. Ops. (7)
Leo J. Battista, Prog. Mat'l. Mgmt. (25)
Harold V. Proskey Jr., ILS Admin. (40)

30

Gordon A. Mitcher, Assy. Methods (1)
Robert E. Lee, Integ. Verif. & Validation (1)
Albert O. Johnson, Mfg. Sys./Doc. (2)
William Brinkerhoff, Mach. Shop (2)
Frederick Ford, Prod. Cont.-Parts Cont. (3)
Andrew H. Vinson, Maint. (3)
George DiNatale, Supt. Equip. Prod. (5)
John D. Halajian, Veh. Struct. Anal. (5)
John W. Genega, Electro/Mech. Des. (5)
William C. Schultze, Instr. Plann. & Cont. (6)
Ferdinand J. Rudolph, Flt. Saf. & Supt. (7)
Rodney G. Smith, ATS Ops. (7)
Charles J. Weizenecker, Metallurgical Eng. (12)
Nathan A. Anello, Mat'l. Mgt. (21)
James M. Wagner, Pres. Serv. (25)
Walter M. Beauchamp, Honeycomb Layup & Bond (66)
Francis E. Campbell, Pers. Rel. (GHQ)
Arthur J. McIntyre Jr., SE Sys. Prog. (GHQ)

25

George Poletti, Radar (1)
Benjamin J. Stafford, Flt. Ops. (4)
Donald J. Walsh, Veh. Lia. Eng. (4)
Wilbur A. Gerkin, Model Shop (5)
Paul F. Wilson Jr., Adv. Prog. Est. (5)
Michael H. Howard, Maint. (6)
Austin J. Curtin, Meas. Std. Lab. (12)
John J. Zale, Elect. Test (14)
Robert P. Bisey, Electronics (14)
Lester W. Hoffman, ILS Tech. Illus. (15)
Elbert E. Kirkpatrick, ILS Dig. TPS Eng. (25)
Joseph A. Becchina, ILS Sub-Sys. Eng. (25)
Anthony L. Caserta, Comp. Arch. (25)
Frederick D. Drucker, Sys. Dev. & Integ. Mgt. (25)
John C. Burckley, Subsystems (30)
Walter F. Vogelsberg, ILS Admin. (35)
Alice M. Kumer, Corp. Qual. Mgmt. (35)
Alfred Rodman, Prog. Mat'l. Mgmt. (40)
Alice J. Semcken, EF-111 Prog. Mgmt. (112)
Pasquala F. Simonetti, Data Systems OP Sch. (GHQ)

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Grumman World — June 28

Grumman Seeks To Make Clearer Crystals In Space

To get a clearer picture of what it takes to produce better materials in space, astronauts will perform the first of a series of Grumman experiments during the upcoming June Shuttle mission of *Discovery*.

Space offers certain experimental conditions which do not exist on earth, such as low gravity. "Once something has been demonstrated under experimental conditions in space, Grumman scientists can more easily approach some of those conditions on earth," says Dave Larson, Corporate Development Center staff scientist and program manager of the Materials Processing in Space Program.

The Corporate Research Center experiments are being funded by the Microgravity Science and Applications Division of NASA. These space experiments will determine whether space processing has the potential to produce materials with better properties than those that can be produced on earth.

Since the mid-1970s, Grumman research scientists have undertaken a series of test programs to study the solidification of certain materials. This work entails an experimental process known as directional solidification, which uses precisely controlled temperatures to solidify a material. During the process, the material's crystalline structure is aligned in a fashion that minimizes imperfections.

"The upcoming space Shuttle experiments will focus on magnetic materials," says Dr. Philip Adler, head of Grumman's Materials Science Laboratory. "But it's important to note that the implications of Grumman's work in directional solidification may have an impact on electronic, optical and sensor materials as well."

Over the years, Grumman has flown material processing experiments on Skylab, the Apollo/Soyuz Test Project (ASTP) and seven SPAR rocket space processing applications missions.

The low gravity space experiments and parallel ground-based program at the Corporate Research Center have led to significant advances in directional solidification, specifically improved furnace design and increased magnetic composite performance.

"Space is quite important in terms of our experimentation on earth too," says Larson. "For example, we first became aware of the enhanced performance of heat-treated materials in space experiments aboard ASTP. Our previous results on earth had been very poor."

According to Larson, the overall efficiency of magnets in industrial applications is 20-30 percent. "Through our experimentation with directional solidification, we have been able to improve that efficiency to 70-80 percent. With additional heat treating experimentation, we have increased efficiency over 90 percent."

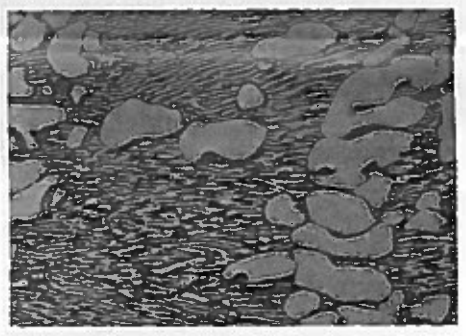
Increasing the efficiency of magnetic materials actually means increasing the magnetization of the component materials that make them up. These component materials are the basis of the space shuttle experiments. Increasing their efficiency makes them better suited for industrial application.

Grumman's space experiments will be conducted in NASA-supplied furnaces of special design.

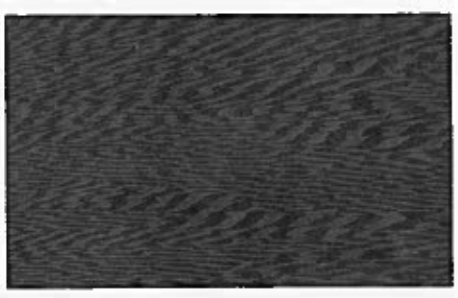
On the June shuttle mission, experiments will be conducted in a Low Temperature (1100°) Automated Directional Solidification Furnace in the *Discovery's* mid-deck area.

A High Temperature (1600°) Automated Directional Solidification Furnace system will be used in the mid-August Shuttle flight aboard *Columbia*. This furnace will be located in the Shuttle's payload area.

Additional directional solidification experiments are planned for a December 1985 Shuttle flight. There is tentative approval for two more Shuttle experiments in 1986 and 1987. ■



Magnetic composite crystals, magnified 100 times, are shown prior (above) and after (below) directional solidification treatment in a furnace on earth. Shuttle experiments will seek to perfect the material even further in the low gravity of space.



In Search Of Excellent Grumman Bosses

Much is being written about managers lately. There are one-minute managers, there are managers who go by the books. Some are in search of excellence (in the sequel, the best ones have a passion for it) and some have decided not to manage, but to lead. Then there are bosses who believe in MBWA (management by wandering around) and others who simply keep their fingers crossed and hope for the best.

Ever willing to borrow an interesting idea, we would like to do a story on Grumman managers. If you have a terrific boss, we'd like to hear from you. Bosses who are just nice people aren't what we're after. We want to know about managers who can motivate people and produce results.

What makes a great boss? What works — what doesn't? Write or call Grumman World with your ideas. (And especially you Grummanites off Long Island — we hardly ever hear from you.) ■

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Participants in the Systems Engineers Program receive intensive classroom instruction in a variety of engineering disciplines. Above, Grady Williams conducts a class with participants: (L to R) Mina Gregory, Bruce Engelberg, James Keegan, Laura DeGrazia, Bob Lutz, and Bill Wrinkle.

Cultivating 'Home Grown' Engineers

In its latest effort to fill the growing need for experienced engineers, Grumman's Engineering Department has established a new Systems Engineers Professional Development Program (SE/PDP). The program's goal is to develop experienced system engineers from within the company's engineering ranks.

"We've come up with the SE/PD Program to address a problem that Grumman and the entire aerospace industry are facing – the shortage of systems engineers," says Bob Knoetgen, director of Systems Development and Integration and SE/PDP coordinator.

"We need engineers with a broad range of skills and experience who are capable of seeing a program through from beginning to end," says Knoetgen. "Such people are getting harder and harder to find in the industry."

Systems engineers are concerned with the specific mission that a customer wants a system to perform. They oversee the integration of the various technologies, hardware, and software involved in creating a product. "In order to accomplish such divergent tasks, a systems engineer is required to be a virtual jack-of-all-disciplines," says Knoetgen.

"Typically, systems engineers have had a minimum of five years of experience on a number of programs. In the era of specialists, the systems engineer is a do-everything, multi-talented individual," he adds.

Grumman's SE/PD program will cram what might normally take an engineer five or more years to learn into two years of intensive instruction and job assignments.

The program consists of three major elements. It contains a comprehensive educational program of 144 hours of classroom instruction in all the technical aspects of systems engineering.

Engineers will be taught during regular working hours, four hours per week. The graduate level course work will be graded by the instructors.

Participants will also be placed in at least three different work assignments, each eight months in duration, under the supervision of an experienced systems engineer. The students will be expected to perform the tasks of systems engineers, even though they will still be aquiring the full range of knowledge necessary.

The SE/PD Program will grade the participants on how well they handle each of their new assignments. "Being thrust into unfamiliar territory with considerable responsibility won't be easy," says Knoetgen, "but we hope the technique will produce engineers who are adaptable and work well under the gun – qualities that are important for a systems engineer."

The third element of the program will be tours and short-term field assignments. "We want to give the participants a look at the big picture of Grumman and its customers," says Knoetgen.

Because of the high degree of difficulty built into the program, Knoetgen says Grumman plans to reward those who successfully complete it. One such reward could be an earlier than usual upgrade to senior engineer.

Will Bischoff, vice president Engineering says, "We hope that the Systems Engineers Professional Development Program will be an effective method of producing 'home-grown' system engineers. We have to look at every possible means of bolstering our engineering work force."

The SE/PD Program will run two years. Based on the results of the trial run, the Engineering Department will consider increasing the number of participants and starting classes more frequently than every two years. ■

The Chosen Few

Six Grumman engineers have been selected to participate in the company's new Systems Engineer/Professional Development Program.

The participants are: Laura DeGrazia, Computer Design Group, Plant 106; Bruce Engelberg, A-6E TRAM, Plant 7; Mina Gregory, Computer Design/E-2C Radar, Plant 25; James Keegan, Automated Test Equipment Systems, Plant 106; Bob Lutz, EF-111A, Plant 112; and Bill Wrinkle, Advanced Systems, Plant 5.

All were nominated by their department heads. Their selection was based on a number of factors including current skill level, experience and years with Grumman. ■

Postal Van Racks Up 36K Miles

(Continued from page 1)

traveling 2,880 miles on road and shoulder, stopping every 250 feet and accelerating up to 15 m.p.h. between stops; traveling 5,760 miles on a closed-loop five-mile paved road at 50-55 m.p.h.; and covering 11,520 miles over a gravel road at speeds of 30-45 m.p.h.

To make things true-to-life, the vehicles were expected to haul a 1,000-pound load during half of the 24,000-mile test track and, during the other half, a driver and sandbag, equaling a combined weight of 400 pounds.

The test vehicles were expected to offer ease of handling by Postal Service drivers (ranging from a 6-foot-2-inch, 210-pound male to a 4-foot-11, 85-pound female). The vehicles were also required to be weathertight in simulated downpours.

"Since we are the only competitor to date to finish the test track phase, and the others are experiencing problems, we can't be sure when the Postal Service will issue a request for the final phase – cost proposals. That, of course, affects the timeframe for awarding the contract," said Ferdman. "It may be a few weeks, or it may take until later in the year."

Grumman is pitted in the competition against AM General Division of LTV Aerospace and Defense Co. of Detroit; and POVECO, a corporation formed in July 1984 by the General Automotive Corp. and Fruehauf Trailer Corp. specifically to build the Long-Life Vehicle.

As a prelude to the Postal Service test, Grumman operated a similar vehicle around the clock for 24,000 miles at a General Motors Corporation proving ground at Mesa, Arizona. This test duplicated every type of driving condition the Postal Service vehicle might encounter on the Laredo track. ■

'The Last Thing We Need Is A 120-ton Juggernaut Rolling Through The Plant'

"Originally, we planned to soap up the floor and slide it in, but we were worried that once it started moving it might be difficult to control. The last thing we need is a 120-ton juggernaut rolling through the plant," said Bill McKenna, project leader-Forming Operation, Plant Modernization Program.

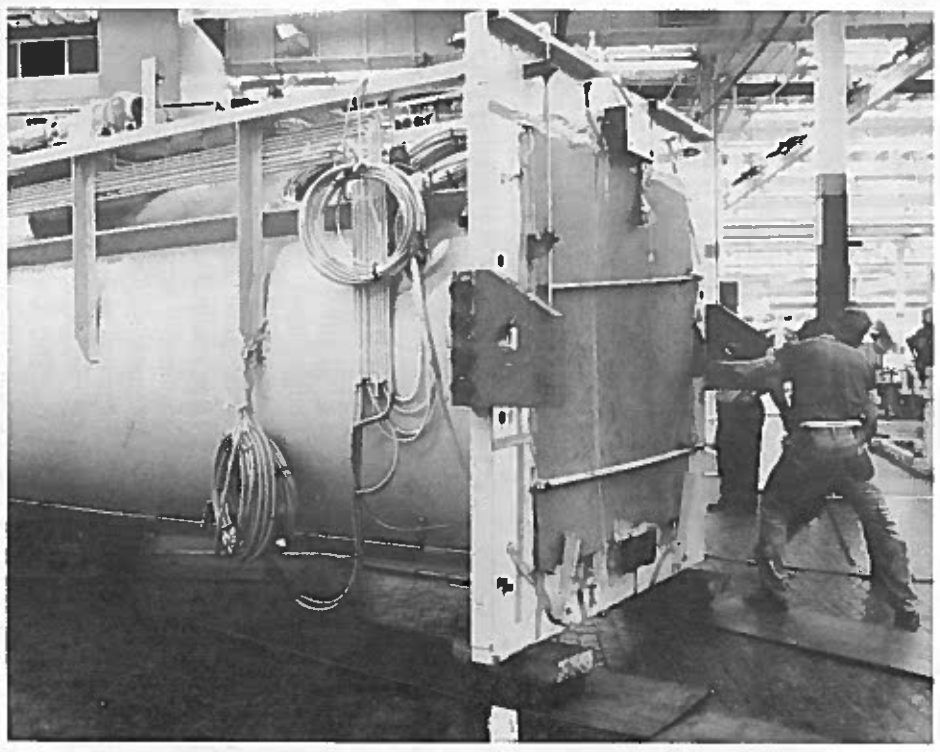
The weighty problem was a 120-ton Asea fluid cell forming press. The press is used to form structural components out of aluminum or steel sheet metal, with up to 20,000 pounds per square inch (PSI) of pressure. The Forming department in Plant 2 already has a similar press that produces 8,000 PSI.

"We need better definition in certain parts than the smaller press in Plant 2 can provide. By going to a considerably higher PSI, we can greatly reduce the need for hand reworking of the structures," said McKenna.

Most of the pieces of the Asea press arrived on May 8 and were installed in Plant 3 with little difficulty. But the main component – a wire-wound vessel designed to hold hydraulic fluid – required some heavy thinking before it could be properly situated in Plant 3's Forming department.

"The riggers for Asea decided against soaping the block floors and used metal plates and dollies to roll the tank. The first two sets of dollies buckled under the weight. They tried a set of rubber wheeled dollies and that cracked and sent ball bearings all over the place. They finally had to send to New Jersey for a set of special 100-ton dollies. It was a very, very big job," said McKenna.

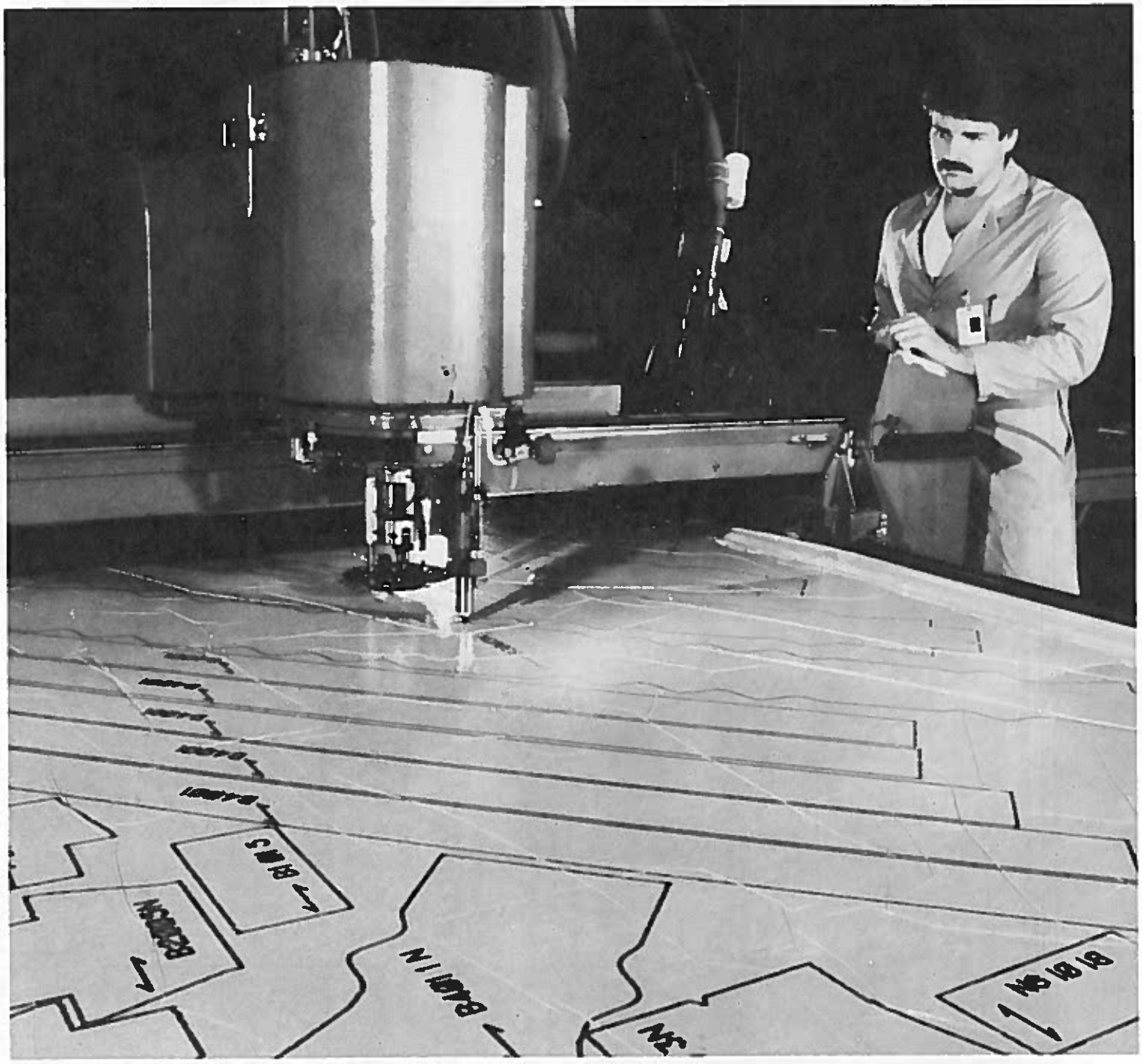
The big press is expected to be operating by the end of the month. "It will give us much better parts pressing capabilities in the Plant 3 Forming department," McKenna added. "Now we'll really be able to throw our weight around." ■



The 120-ton Asea fluid cell forming press posed some challenges for the riggers in Plant 3. The metal plates and dollies buckled under the weight. Finally, two 100-ton dollies shipped from New Jersey did the trick.

GrummanWorld

May 24, 1985



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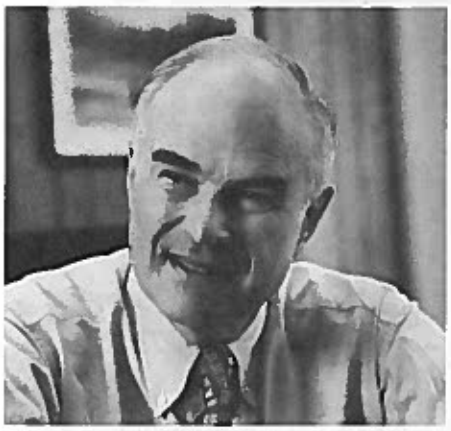
A Letter From The Chairman



Sometimes the significance of what we do day to day is not obvious. But in our business, the way we do our jobs can have far-reaching effects.

In a few days, the first group of Egyptian Air Force personnel will arrive in Bethpage to begin their training at Grumman on the operation and maintenance of their five E-2C Hawkeyes. And how well we do our jobs can affect the future of United States/Egyptian relations.

Egypt is buying E-2Cs not from our company, but from the United States government. Yet, the opinions that the Egyptian Air Force people will bring back to their government – opinions about our country, our products, our people – will largely be formed here, at Grumman.

Egypt is a pivotal country in the economic and political stability of the Middle East and North African nations. It is now in a period of rapid development – building up its economy, its educational system, and military. Modernization of the military is especially important to Egypt, and the E-2C is a significant part of the plan. Because it takes the element of surprise out of any potential aggression, countries with the E-2C can feel secure with fewer weapons. The Hawkeye is a stabilizing influence on this volatile region.

Until the early 1970s, Egypt bought most of its aircraft from the Soviet Union. However, the Soviets never gave Egypt self-sufficiency. They retained control by never providing enough support, enough training in maintenance and operation. The Egyptians had to depend on the Soviets for the "magic wrench."

The United States philosophy about foreign military sales is in sharp contrast. Our government directs Grumman to make sure that the Egyptians are thoroughly self-sufficient in all levels of Hawkeye ownership.

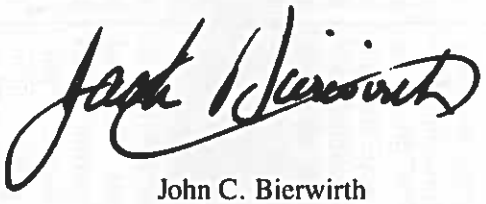
That means that we must tailor every aspect of training to suit the customers' needs, permitting them to set the pace. If we do this, then every Egyptian Air Force pilot and operator that we train will have confidence in the Hawkeye's capabilities; they'll be able to make it perform the way we say it can. Every maintenance person will know how to keep the Hawkeye humming – and how to fix anything that goes wrong.

And it means that when the Egyptians leave here, we will provide all the in-country support they need to operate the E-2C in their homeland.

The Egyptian Air Force demands self-sufficiency, and it's our job to help them attain it – just the way we make sure all our customers get their money's worth.

We'll do a good job because that's the way we run our business, and because it's the right thing to do. But also because a satisfied customer is the best possible advertisement we could have.

It's a job worth doing – and we're going to do it well.



John C. Bierwirth
Chairman

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